SANTA CLARA COUNTY FLOOD CONTROL

AND

WATER DISTRICT

REPORTS

ON

PROPOSED IMPROVEMENTS

TO

CRIBARI CREEK AND NORWOOD CREEK

ZONE E-1

PROJECT NUMBER 40036 (CRIBARI CREEK)

PROJECT NUMBER 40042 (NORWOOD CREEK)

TC
425
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1969

September 1969

.C55-1

TC425C7SR4I69

SANTA CLARA COUNTY FLOOD CONTROL

AND

WATER DISTRICT

REPORTS

ON

PROPOSED IMPROVEMENTS

TO

CRIBARI CREEK AND NORWOOD CREEK

ZONE E-1

PROJECT NUMBER 40036 (CRIBARI CREEK)

PROJECT NUMBER 40042 (NORWOOD CREEK)

September 1969

SANTA CLARA COUNTY FLOOD CONTROL
AND
WATER DISTRICT

DISTRICT BOARD OF DIRECTORS

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Lloyd C. Fowler, Director of Engineering

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santa clara county

FLOOD CONTROL AND WATER DISTRICT

DONALD K. CURRLIN GENERAL MANAGER

516 EAST MARTHA STREET
SAN JOSE, CALIF. 95112
DEPARTMENT OF ADMINISTRATION AND FINANCE 299-2031
CLERK OF THE BOARD 299-2031
ENGINEERING DEPT. 299-3841
PUBLIC SERVICE DEPT. 299-3841

August 26, 1969

Board of Directors
Santa Clara County Flood
Control and Water District
516 East Martha Street
San Jose, California 95112

Gentlemen:

Transmitted herewith is the Engineer's Report on Proposed Improvements to Cribari Creek, Project Number 40036, and Norwood Creek, Project Number 40042, in Zone E-1 (East) of Santa Clara County Flood Control and Water District.

The Cribari Creek report describes 1,960 feet of proposed improvements consisting of reinforced concrete pipe, impact type energy dissipator and a reinforced concrete junction structure. The estimated cost of the proposed 1,960 feet of improvement is $133,400. These proposed improvements have been constructed in conjunction with the development of a subdivision in the City of San Jose. The cost of this construction would be reimbursable under terms of an agreement between the developer and the District.

The Norwood Creek report describes 13,000 feet of proposed improvements consisting of trapezoidal concrete lined channel, rock lined sections, pipelines, culverts, drop structures, energy dissipators, and debris basin. The estimated cost of these proposed improvements is $875,000.

The proposed improvements, when constructed, will prevent major flooding of existing and projected developments in the flood plain areas of Cribari and Norwood Creeks.

I concur in the projects as proposed and recommend a public hearing be held as a prerequisite to payment for completed and further construction of the projects.

Respectfully submitted,

Donald K Curlin

General Manager

SANTA CLARA COUNTY FLOOD CONTROL

AND

WATER DISTRICT

REPORTS

ON

PROPOSED IMPROVEMENTS

ON

CRIBARI CREEK

ZONE E-1

PROJECT NUMBER 40036

September 1969

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2 WATERSHED MAP

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Introduction

Cribari Creek is located in the East Zone of the Santa Clara County Flood Control and Water District. It originates in the foothills east of San Jose and meanders across grape vineyards until it outfalls into Thompson Creek. The Cribari Creek watershed is bounded on the north by the Yerba Buena Creek watershed, and on the south by a tributary of Thompson Creek. The majority of the watershed is located within the City of San Jose.

Under natural conditions, the north branch of Cribari Creek will cause flooding in most of the area after it emerges from the eastern foothills. This area was previously vineyards but more recently has been developed into a golf course, and future plans call for multi-unit and single unit residential homes to be developed. As an interim temporary measure the north branch has been diverted by the developer to the south branch; this relieved the flood problem on the north branch but overtaxed the south branch causing flooding there. This problem will be resolved by construction by the developer of channel improvements on the south branch and on the main stream to the outfall with Thompson Creek.

The plans for this work which are presented in this report have been reviewed and recommended by the East Zone Flood Control Advisory Committee, and approved by the District. The agreement provides that the developer would finance and construct the required flood control improvements, and the District would repay him subject to a successful public hearing and availability

of funds.

This Engineer's Report on the proposed improvements on Cribari Creek is a prerequisite to a public hearing on the project and the repayment of the advanced construction funds. The report presents the results of a number of studies of the various improvement alternatives that were analyzed. The report consists of:

1. A general description of the watershed and the flood problems, with a map showing the location of the proposed project.
2. A discussion of the proposed project together with plates showing plans, profiles and rights-of-way.
3. An estimate of the cost of the proposed project and suggested means for financing these costs.

DESCRIPTION OF WATERSHED

Cribari Creek watershed is shown on Plate 2 which is a general map of the area. The creek originates in the hills above San Jose at elevation 2500, and flows westerly from the hills in two main branches which merge about 1,500 feet before the confluence with Thompson Creek. The watershed averages about 2,500 feet wide, is about 3 miles long, and has an area of about 1.5 square miles. The average annual precipitation is about 18 inches.

With the exception of the upper hills the entire watershed is within the City of San Jose. Most of the downstream gently sloping areas are presently being developed into part of the urban community.

Surficial soils of the upper one-half of the drainage basin consist of silt and silty clay or silty and sandy clay overlying bedrock consisting of sandstone, conglomerate, and shale. Although the topsoils are locally permeable, rates of infiltration into the subsoil and bedrock are low. The topsoils are generally easily erodable; consequently, runoff from the subsoil and bedrock is usually rapid.

The lower portion of the drainage basin contains soils consisting of silty sand and gravel derived from younger alluvium and some older alluvium consisting of clayey gravel near the confluence with Thompson Creek. Infiltration rate of those soils is moderate to rapid.

The native growth in the hills is mainly grass with some low growing brush and a few trees. This type of land cover has some effect in reducing

the runoff from low intensity storms but has little or no effect on the higher intensity rainfall that produces the design flood flows.

The characteristic factors of the watershed and the proposed development of watershed were considered in computing the flood flows for the design of the creek improvements.

DESIGN CRITERIA

The criteria used in the design of the Cribari Creek flood control improvements followed accepted engineering standards. Conservative values of roughness (representing the friction of the pipeline to the flow of water) were used in the hydraulic design to allow for some deterioration in pipe smoothness with time. Economic evaluations of alternative designs were based on estimates of construction, including engineering and inspection costs, right-of-way values, and the present worth of future maintenance costs.

The level of protection to be provided by the completed improvements, in accord with the District standard, is a project that is designed to safely convey a one percent flood (the so-called 100-year recurrence frequency flood) to a point of disposal. The design flood flows meeting this standard for Cribari Creek were computed by means of a regional flood frequency hydrologic analysis. This multiple correlation analysis, based on data from gaged watersheds, was utilized to determine the peak flood flow in accordance with tributary area, mean annual precipitation and basin shape. Table I represents a tabulation of these values for selected locations on Cribari Creek.

TABLE 1

Design Flood Flows

Station	Location	Watershed Area (Acres)	Design Flow (cfs)
All of South Branch to 20 + 71	From pickup point of South Branch (by others) to confluence of the two branches	310	140
North Branch to 20 + 71	From pickup point of North Branch (by others) to confluence of the two branches	630	350
20 + 71 to 1 + 12	From confluence of two branches to outfall into Thompson Creek	970	500

DESCRIPTION OF PROPOSED PROJECT

The proposed improvements to Cribari Creek extend over a length of 1,960 feet upstream from its confluence with Thompson Creek. The current improvements consist of reinforced concrete pipe, energy dissipator, and a temporary intake structure on the main stem. The future improvements will consist of feeder lines (sufficiently large to intercept and convey the design flood), debris dams and intake structures on each branch. Except for the debris dams, the District's responsibility for maintenance and operation of the facilities would terminate at the junction of the two branches of Cribari Creek.

At the confluence of Thompson Creek, an impact-type energy dissipator has been constructed. Upstream from this confluence (Station 2+37 to Station 20+68) a 66-inch reinforced concrete pipe has been constructed according to the design shown on Plates 3 and 4 of this report. The junction structure constructed at Station 20+68 was designed to accept a 60-inch pipe carrying the north branch flow and a 48-inch pipe carrying the south branch flow. These feeder lines will be constructed to conform with District requirements in so far as providing the capacity required to intercept and convey the design flood to the flood control facilities at Station 20+68.

Debris dams and basins will be required at the entrance of the two feeder lines in order to minimize the possibility of debris clogging these lines and the District's facilities at the lower end of the project. During the interim period until the total construction of the feeder pipes is completed, the developer will install temporary inlet structures and debris dams at the entrances of the pipe system.

CONSTRUCTION STAGING

Cribari Creek Flood Control Improvement Project divides into two construction stages. Stage I includes the existing channel improvements which have been installed with funds advanced by a developer. Stage II would consist of the feeder pipelines and debris dams which will be constructed by the developer to the District's specifications.

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COUNTY FLOOD CONTROL AND
WATER DISTRICT
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PROJECT COSTS AND FINANCING

Estimates of the cost of construction of the channel improvements for Cribari Creek were made using the accepted low bid for actual construction plus a 15 percent contingency item. These costs are presented in Table 2.

TABLE 2

Estimated Cost of Project

Reach No.	Station Limits	Construction	Contingencies	Total
1	1+12 to 20+71	116,130	17,270	133,400

The balance of the project as described in this report will be financed by the developer. No right-of-way cost has been included in this Table, as the developer has agreed to dedicate all lands required for construction and maintenance of the improvements.

The current source of revenue from zone taxes will not provide the funds to reimburse the developer in the immediate future. Therefore, it is recommended that this project be financed from future revenues that may be available to the District.

CONCLUSIONS AND RECOMMENDATIONS

As a result of the investigation reported herein, it is concluded that:

1. The unimproved channel of Cribari Creek is inadequate to prevent flooding and damage to urban development now occurring in the flood plain of the creek.
2. Development of the area is being deterred by lack of sufficient flood control facilities.
3. The most economical solution to the flood control problem is to construct a reinforced concrete pipeline from San Felipe Road to a point about 2,100 feet east.
4. The estimated constructed cost including contingencies is $133,400.

It is recommended improvements of Cribari Creek as proposed herein be approved and financing of the improvements be from future revenues as may be available to the District.

Submitted by

John L. Richardson
Senior Hydraulic Engineer

Recommended Approval:

William M. Roman
Deputy Director of Engineering
Planning Branch

Approved:

Lloyd C. Fowler
Director of Engineering

MAP AND GENERAL PLAN

FOR

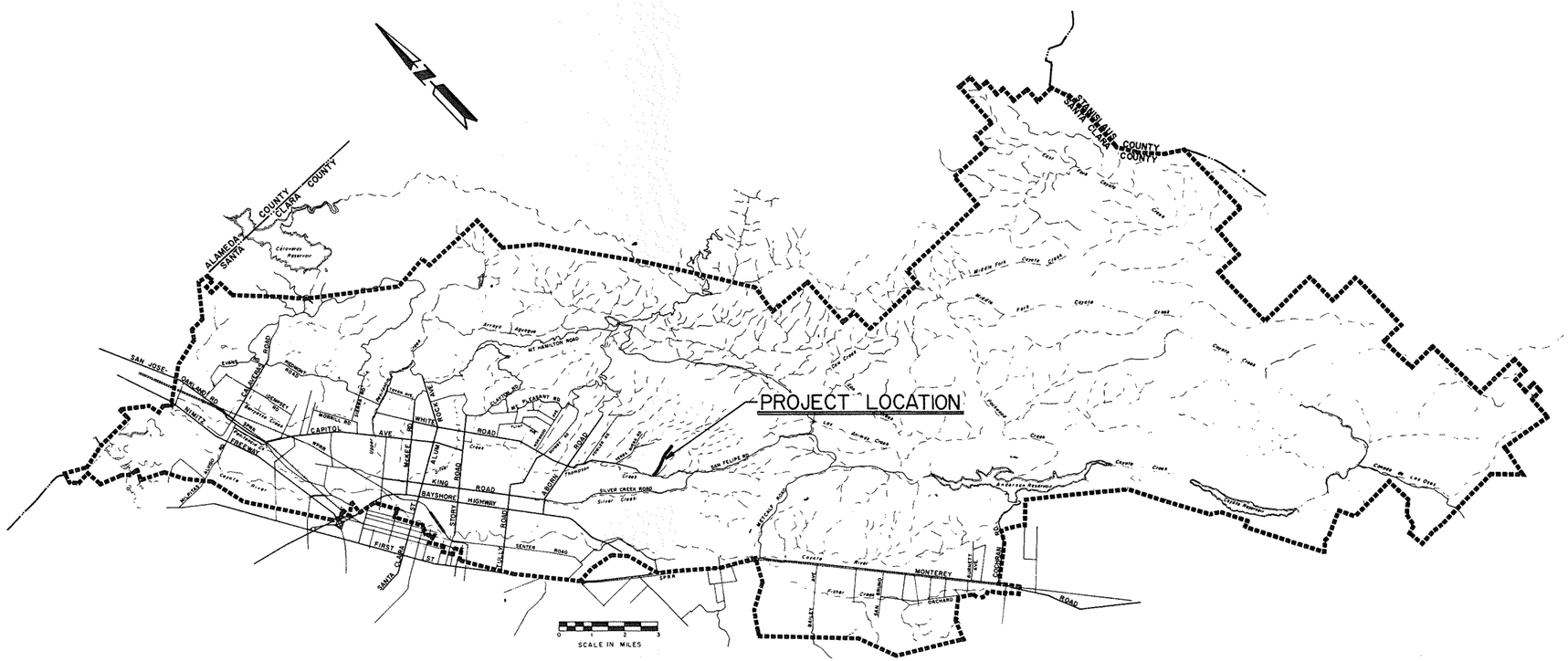
CRIBARI CREEK

FROM THOMPSON CREEK TO FOOTHILLS

PROJECT NO. 40036 IN ZONE E-1 'EAST'

SANTA CLARA COUNTY FLOOD CONTROL AND WATER DISTRICT

SANTA CLARA COUNTY, CALIFORNIA

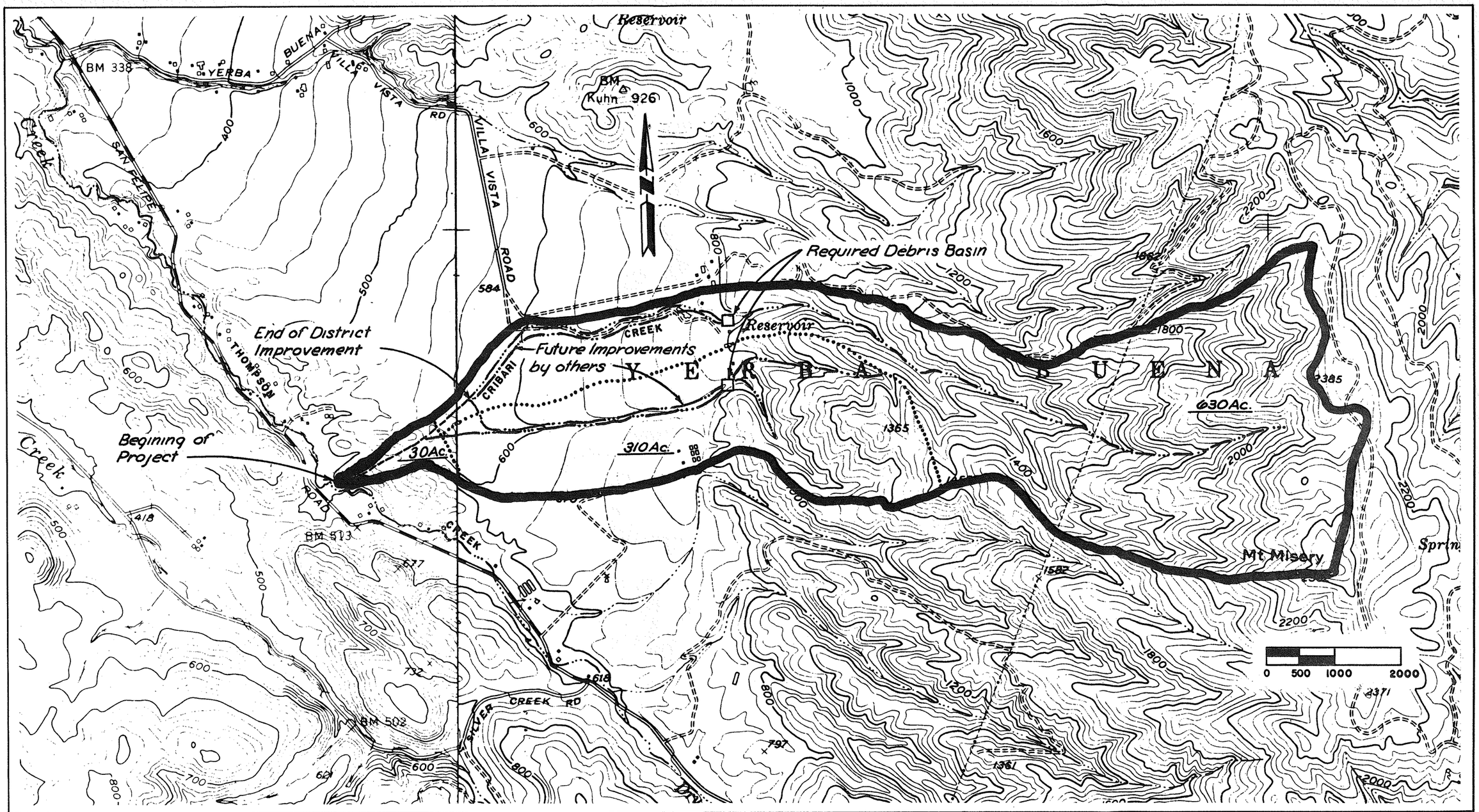


Project Approval:

General Manager

Date: 8/18/69

PLATE I



LEGEND

- PROJECT ROUTE
- FUTURE IMPROVEMENT (OTHERS)
- MAIN WATERSHED BOUNDARY
- INTERMEDIATE WATERSHED BOUNDARY

CRIBARI CREEK WATERSHED
TOTAL DRAINAGE AREA — 970 Ac.

DATE	Aug. 1969
DESIGN	J.L.R.
DRAWN	L.S.
CHECKED	J.L.R.

SANTA CLARA COUNTY FLOOD CONTROL AND WATER DISTRICT

ENGINEERING APPROVAL

William M. Beaman

Lloyd C. Fowler
DISTRICT ENGINEER R.C.E. No. 10822

MAP AND GENERAL PLANS

ZONE E-1 (EAST) PROJECT 40036

CRIBARI CREEK

SCALE AS SHOWN

PLATE 2

PLAN
SCALE: 1"=40'

PROFILE
SCALE: HORZ. 1"=40'
VERT. 1"=8'

BENCH MARK
R.R. SPIKE IN JOINT POLE
NO. 65 - ELEV. 472.68

REINFORCED CONCRETE PIPE, CLASS III, IN THIS REACH

RCP CL. III (ALT. A)

REFER TO TRACING FOR LATEST REVISION

REV.	DESCRIPTION	SUB	APPR.

REFERENCE INFORMATION AND NOTES

THIS PLAN AND PROFILE PLATE WAS PREPARED ORIGINALLY BY RUTH AND GOING ENGINEERS FOR THE CONSTRUCTION PLANS OF THIS PROJECT.

DATE	Aug. 1969
DESIGN	J.L.R.
DRAWN	L.S.
CHECKED	J.L.R.

SANTA CLARA COUNTY FLOOD CONTROL AND WATER DISTRICT

ENGINEERING APPROVAL

William M. Roman

Lloyd C. Fowler
DISTRICT ENGINEER R.C.E. NO. 10822

MAP AND GENERAL PLANS

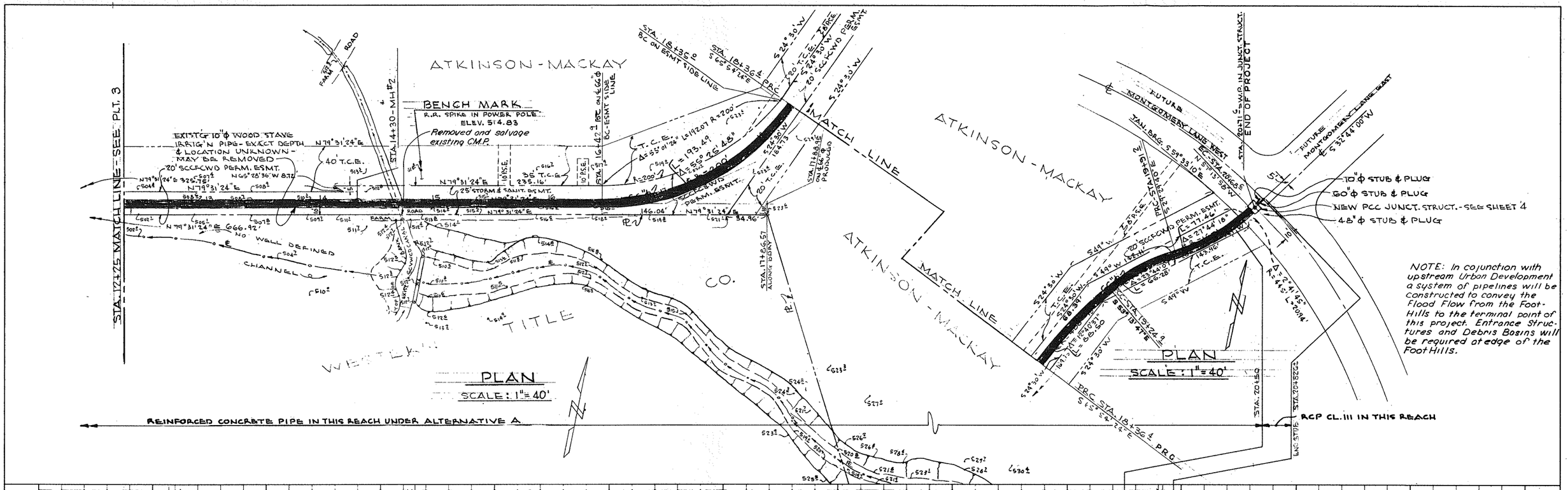
ZONE E-1 (EAST) PROJECT 40036

CRIBARI CREEK

SCALE AS SHOWN

PLATE 3

13802-900



NOTE: In conjunction with upstream Urban Development a system of pipelines will be constructed to convey the Flood Flow from the Foot-Hills to the terminal point of this project. Entrance Structures and Debris Basins will be required at edge of the Foot Hills.

REFER TO TRACING FOR LATEST REVISION

REV	DESCRIPTION	SUB	APPR

REFERENCE INFORMATION AND NOTES

THIS PLAN AND PROFILE PLATE WAS PREPARED ORIGINALLY BY RUTH AND GOING ENGINEERS FOR THE CONSTRUCTION PLANS OF THIS PROJECT.

DATE AUG 1969
DESIGN J.L.R.
DRAWN L.S.
CHECKED J.L.R.

SANTA CLARA COUNTY FLOOD CONTROL AND WATER DISTRICT

ENGINEERING APPROVAL

William M. Roman — Lloyd C. Fowle, DISTRICT ENGINEER, R.C.E. NO. 10822

MAP AND GENERAL PLANS

ZONE E-1 (EAST) PROJECT 40036

CRIBARI CREEK

SCALE AS SHOWN

PLATE 4

SANTA CLARA COUNTY FLOOD CONTROL

AND

WATER DISTRICT

REPORT

ON

PROPOSED IMPROVEMENTS

ON

NORWOOD CREEK

ZONE E-1

PROJECT NUMBER 40042

SEPTEMBER 1969

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4 Plan and Profile (Station 26+25 to Station 58+28)

5 Plan and Profile (Station 58+28 to Station 89+30)

6 Plan and Profile (Station 89+30 to Station 108+00)

7 Plan and Profile (Station 108+00 to End of Project)

INTRODUCTION

Norwood Creek is located in the East Zone of the Santa Clara County Flood Control and Water District, with the major portion of its watershed in the unincorporated territory and the balance in the City of San Jose. The existing creek originates in the foothills east of San Jose and flows in a defined channel until it enters the valley floor. As the creek leaves the foothills, the grade flattens and the channel becomes nonexistent causing the flow to spread, resulting in sheet overland flow. This overland flow, during large events, outfalls into Thompson Creek and eventually reaches Coyote Creek. The Norwood Creek watershed is bound on the north by the Ruby Creek watershed and on the south by the Quimby Creek watershed.

Norwood Creek has a small drainage area of 2.25 square miles but it has a high flood potential because of the steep watershed slopes and lack of a defined channel in the lower reaches. The surrounding area is rapidly urbanizing and additional development in the watershed will increase the potential flood damages. Therefore, in order to eliminate the potential flood hazard and provide an outfall for local drainage, the capacity of Norwood Creek to contain floods must be improved. Alternative types and combinations of improvements have been studied to develop the most

economical solution to the problem. This report presents the results of these studies and consists of:

1. A general description of the watershed and the flood problems together with a map of the proposed channel improvements.
2. A discussion of the proposed project with plates showing plans, profiles, typical cross-sections and rights-of-way.
3. An estimate of the costs of the proposed project and suggested means of financing these costs.

DESCRIPTION OF WATERSHED

The Norwood Creek watershed has a drainage area of 2.25 square miles with about 60 percent of this area in the steep foothills and the balance in the relatively flat valley floor now used for orchards or vineyards. At the present time there are only scattered homes in the watershed and the valley portion is primarily used for orchards or vineyards. The major existing streets in the watershed are Norwood Avenue and White Road. Some subdivisions are now being planned and it is anticipated that most of the lower area will eventually be developed into an urban community.

Plate 2 is a map showing the Norwood Creek watershed and illustrating the general topography of the area. This entire basin has a mean annual precipitation of about 18 inches. The upper portion of the Creek is divided into two branches, with the north branch having a drainage area of 625 acres and the south branch draining 120 acres. The south branch under existing conditions will flow into the Quimby Creek watershed.

In the foothill area of the drainage basin, which ranges up to elevation 2,400, residual soils consist of clay and fine sandy and clayey silt overlying soft shale and sandstone bedrock. These soils are low to moderately permeable, and this helps absorption capacity to reduce peak flows of low intensity. The remaining portion of the basin occupies part of an older alluvial

fan. Surficial soils consist of clay and clayey gravel, and are moderately permeable, with the exception of the area downstream from White Road where clay and silty clay are predominant.

The native growth in the hills is a fairly heavy cover of grass with some trees and shrubs in the canyons. This type of vegetation, especially on the more permeable soils, has a considerable effect on reducing run-off for low rainfall intensities but has little effect on the higher intensity rainfall which produces the design flood flows.

DESIGN CRITERIA

The criteria used in the design of the Norwood Creek flood control improvements followed accepted engineering standards. The design flood was the one percent event with the hydraulic design utilizing the upper limit of the 80 percent confidence level of the design flood as the design discharge in determing freeboard requirements. Conservative values of roughness (representing the friction along the channel banks and bottom) were used in the hydraulic design to allow for some deterioration in channel smoothness with time. Economic evaluations of alternative channel designs were based on estimates of construction costs including engineering and inspection costs, right-of-way values, and the present worth of future maintenance costs.

Completed improvements will provide a level of protection designed to safely convey a one-percent flood (the so-called 100-year recurrence frequency flood) to a point of disposal. The design flood flows meeting this standard for Norwood Creek were computed using the results of a Regional Flood Frequency Hydrologic Analysis. This multiple correlation analysis, based on data from gaged watersheds, was utilized to determine the peak flood flow in accordance with tributary area, mean annual precipitation, and basin shape. The resulting computed design flows are given in Table 1.

TABLE 1

Design Flood Flows

Reach	Station	Location	Watershed Area Acres	Peak Flows, CFS Design (1)	Peak Flows, CFS Upper Limit (2)
1 & 2	0+00 to 52+80	Thompson Crk. to 500' west of Flint Ave.	1444	420	630
3 & 4	52+80 to 103+00	To contour elev. 400	1091	400	600
5	103+00 to 118+65	To Mt.Pleasant Road	770	320	470
6	0+00 to 10+00	South Branch	120	70	100

(1) Design flow is the the one-percent flood or 100-year recurrence frequency.

(2) Upper limit is the expected flood flow at the 80% confidence level for the 100-year recurrence frequency event.

DESCRIPTION OF PROPOSED PROJECT

Proposed improvements to Norwood Creek extend over a length of about 13,000 feet upstream from its confluence with Thompson Creek to a debris basin near Mt. Pleasant Road. These proposed improvements include concrete lined channel sections, rock lined sections, reinforced concrete boxes, drop structures, energy dissipators, concrete pipe, and a debris basin. The proposed improvements are illustrated in plan and profile on Plates 3 through 7.

The required structure at the confluence of Norwood and Thompson Creeks will be a part of the Thompson Creek project. Between Station 1+00 and 1+50 are Pacific Gas and Electric gas lines that will have to be lowered. Upstream from the confluence, Station 0+50 to Station 52+80 a trapezoidal concrete lined channel section is proposed. The channel must be lined to eliminate erosion problems which would result from the combination of slope and soil characteristics. Near Station 33+00 a 90-foot long 12-foot by 6-foot reinforced concrete box culvert is proposed to carry Norwood Creek under the existing White Road. Between Station 34+00 and Station 52+80 the open channel section will be constructed along a line set back 160 feet from the centerline of Norwood Avenue (one lot depth) to enable lots to front on Norwood Avenue. The alternative of designing the reach from Station 0+50 to Station 52+80 as concrete lined channel flowing under supercritical conditions, thus eliminating the drop structures, has

been considered. Although shown to be more costly now, this alternative should be restudied at the time of construction.

Above Station 52+80 the natural grade steepens appreciably and the economics dictate changing from a concrete lined channel to a concrete pipe. An energy dissipator would be installed at the outfall end of the concrete pipe to reduce discharge velocities. After a suitable transition the concrete pipe curves into Norwood Road to a point near Station 96 where it turns southeasterly to follow the existing creek up to the terminal point at the debris dam. The location of this terminal point is where the existing stream channel has adequate carrying capacity and where the South Branch diversion channel can outfall into the debris basin. A debris basin is necessary to trap all bed load rocks and gravel along with large suspended materials and debris that may deposit in the downstream improvements.

The 120 acre watershed of the South Branch which now drains into the Quimby Creek channel would be diverted to the Norwood Creek debris basin. This diversion provides the most economical solution to the problems in both watersheds. To protect the diversion channel from erosive velocities the channel will be rock lined over its 1000 foot length.

CONSTRUCTION STAGING

As there is no existing creek channel below about Station 78, the reach from Thompson Creek to Station 78 should be constructed first, beginning at Thompson Creek and proceeding upstream as funds are available. The pipe system should not be installed until this outfall is completed and at least a temporary debris basin is installed at the pipe inlet. Therefore, if the project is to be constructed by stages, Stage 1 could be the construction of the concrete lined open channel up to Station 52+80. Stage II could encompass the remainder of the project which would include the concrete pipe, debris dam, and South Branch diversion channel.

PROJECT COSTS AND FINANCING

Estimates of the cost of construction of the proposed flood control facility improvements to Norwood Creek were made using 1969 prices. A contingency item was estimated to account for the costs of engineering, construction inspection, advertising, legal fees, and other incidentals. The estimated costs are presented in Table 2.

TABLE 2

Estimated Project Costs

Stage	Station Limits	Construction	Engineering and Contingencies	Right-of-Way	Total
1	0+00 to 52+80	$ 181,000	$ 45,000	$ 148,000	$ 374,000
2	52+80 to 54+50	16,000	4,000	1,000	21,000
2	54+50 to 103+00	216,000	54,000	4,000	274,000
2	103+00 to 118+65	74,000	19,000	73,000	166,000
2	0+00 to 10+00	20,000	5,000	15,000	40,000
		$ 507,000	$ 127,000	$ 241,000	$ 875,000

The current assessed valuation of the East Zone and the existing tax rate will not provide an adequate source of funds to complete all East Zone projects in the next few years. Therefore, a bond issue will have to be approved if this project is to be constructed in the near future.

CONCLUSIONS AND RECOMMENDATIONS

As a result of the investigation of Norwood Creek reported herein it is concluded that:

1. There is no existing channel for run-off from the Norwood Creek watershed below about Station 78+00, and flood damage will increase as the area urbanizes.
2. The existing channel above Station 78+00 to about Station 115+00 is inadequate to prevent flood damage and is subject to severe erosion problems because of the steep natural gradient.
3. The most economical solution to the flood control problems would be to construct about 5200 feet of concrete lined channel, 6600 feet of concrete pipe, 1000 feet of rock lined channel, and one debris basin.
4. There is room in the open channel R/W for landscaping the creek side slopes if the City or County desires to undertake this work. The additional costs for the landscaping were not included in the project costs.
5. The estimated construction cost including contingencies and rights-of-way is $875,000.
6. A successful bond election will be necessary if the project

is to be completed in the near future.

Based on these conclusions it is recommended that flood control improvements on Norwood Creek as proposed herein be approved and construction initiated as soon as financing is arranged.

Submitted by

John L. Richardson
Division Engineer

Recommended Approval:

William M. Roman
Deputy Director of Engineering
Planning Branch

Approved:

Lloyd C. Fowler
Director of Engineering

MAP AND GENERAL PLAN

FOR

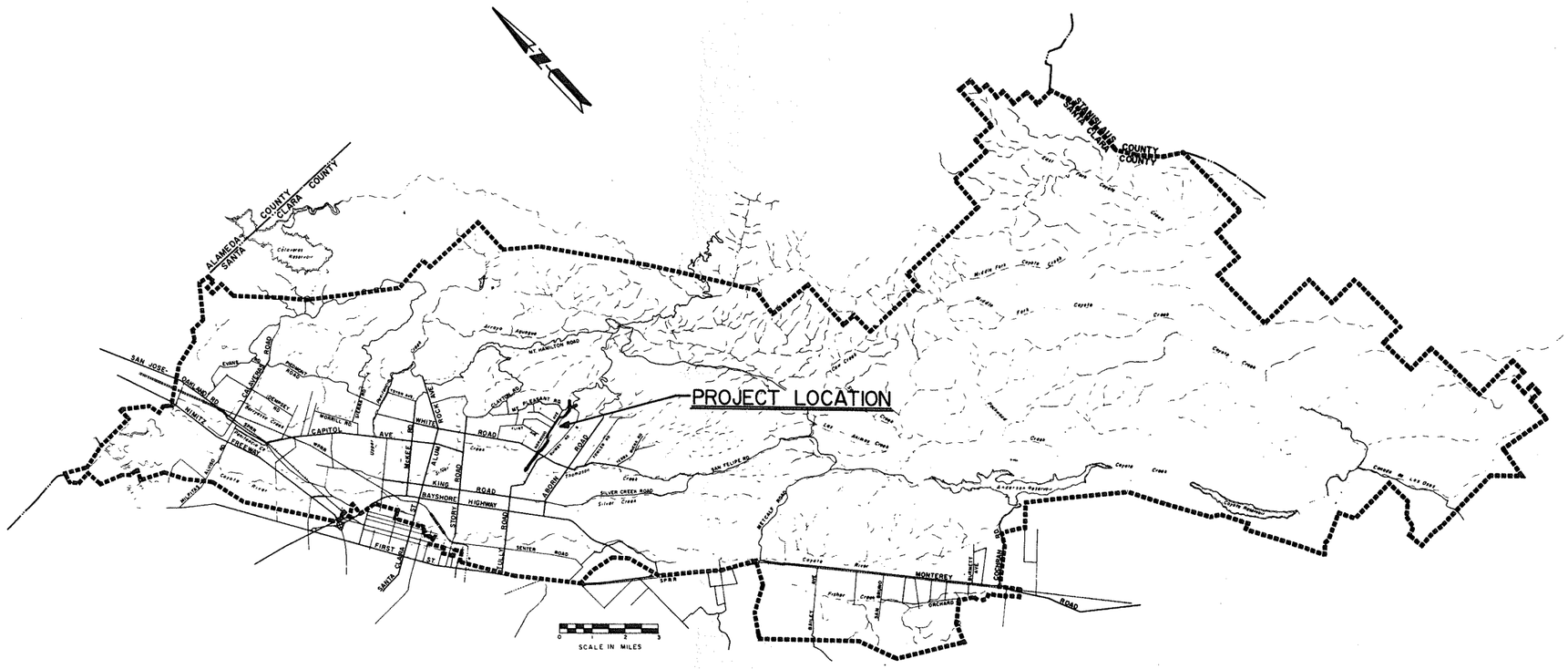
NORWOOD CREEK

FROM THOMPSON CREEK TO FOOTHILLS

PROJECT NO. 40042 IN ZONE E-1 'EAST'

SANTA CLARA COUNTY FLOOD CONTROL AND WATER DISTRICT

SANTA CLARA COUNTY, CALIFORNIA



Project Approval:

Donald K Curtin

General Manager

Date: 8/18/69

PLATE I

REFER TO TRACING FOR LATEST REVISION

REV	DESCRIPTION	SUB	APPR

NOTES

NORWOOD CREEK WATERSHED

TOTAL AREA: 1444 Ac. (2.25 Sq. Mi.)

DATE	Aug. 1969
DESIGN	A.P.M.
DRAWN	
CHECKED	J.L.R.

santa clara county
FLOOD CONTROL and WATER DISTRICT

DESIGNED AND DRAWN BY:

ENGINEERING APPROVAL

PROJECT ENGINEER
William M. Conner

ACCEPTED BY DISTRICT

Lloyd C. Fowler
DISTRICT ENGINEER
C.E. NO. 10823

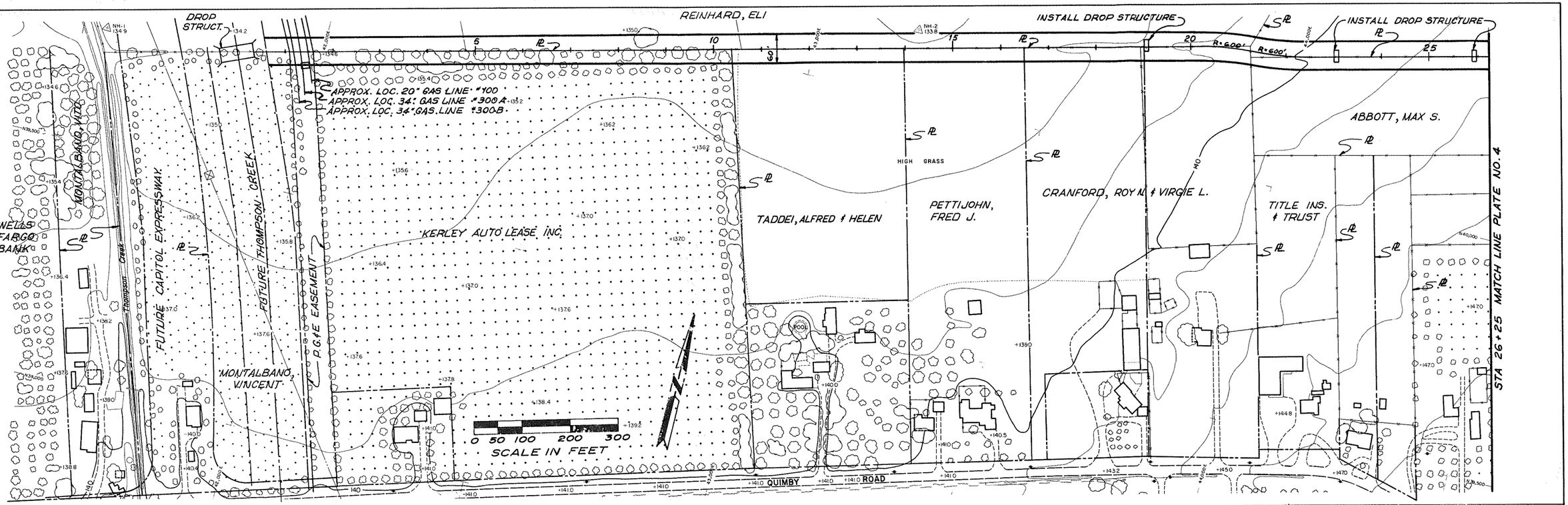
MAP AND GENERAL PLANS

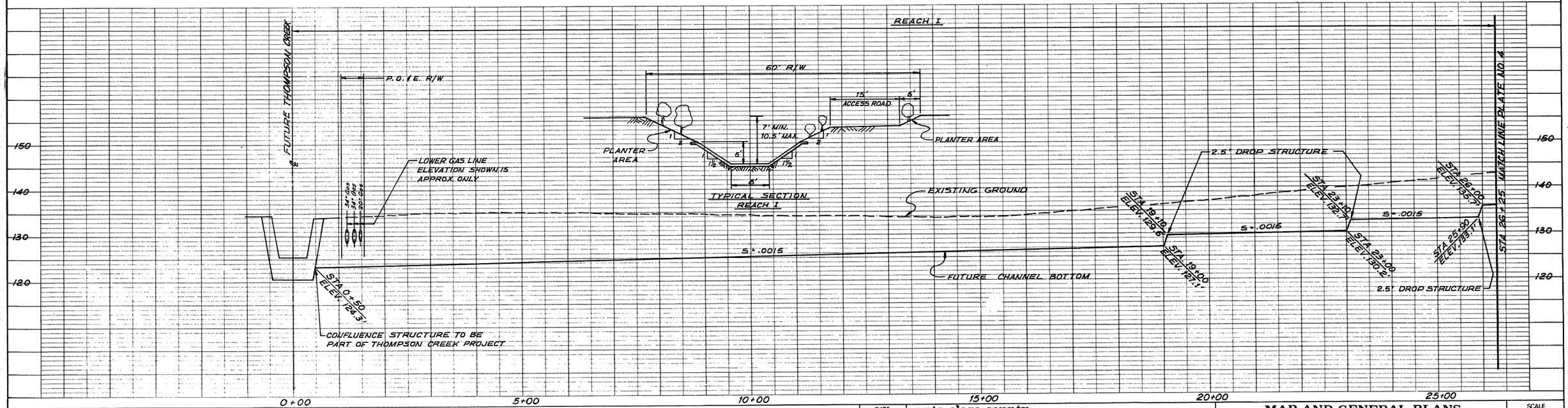
ZONE E-1 (EAST) PROJECT NO. 40042

NORWOOD CREEK

SCALE 1" = 1000'

PLATE 2 of 7





REFER TO TRACING FOR LATEST REVISION

REV	DESCRIPTION	SUB	APPR

NOTES

DATE OF PHOTOGRAPHY: MAY 15, 1967 : MISSION: 6715

BASE MAP PREPARED BY : GEORGE S. NOLTE CONSULTING CIVIL ENGINEERS INC PALO ALTO , CALIFORNIA

DATE: AUG 1969

DESIGN: WFC

DRAWN: MH

CHECKED: JLR

santa clara county
FLOOD CONTROL and WATER DISTRICT

DESIGNED AND DRAWN BY:

ENGINEERING APPROVAL

PROJECT ENGINEER
William M. Ransom

ACCEPTED BY DISTRICT

Lloyd C. Fowler
DISTRICT ENGINEER R.C.E. NO. 10833

MAP AND GENERAL PLANS

ZONE E-1 (EAST) PROJECT NO. 40042

NORWOOD CREEK

SCALE: 1" = 100'

PLATE 3 OF 7

STA 26+25 MATCH LINE PLATE NO.3

ABBOTT, MAX S.

ZUNIGA, PHILIP J.

WHITE ROAD

NORWOOD AVENUE

CALIFORNIA CANNERS & GROWERS

STA 37+00 INSTALL DROP STRUCT.

FRANZINO, PETER S. & MARY

STA 41+00 INSTALL DROP STRUCT.

DOUGLAS, MARGARET S.

SOUZA, JOHN S.

STA 46+10 INSTALL DROP STRUCT.

SCIMECA, NAPHIS

SOUZA, JOHN B. & LYLAS

NORWOOD AVENUE

USBR IMPACT TYPE STILLING BASIN

13' CONSTRUCTION EASEMENT

SORCI, JOE & ELDIVA

25' R/W

STA 58+28 MATCH LINE PLATE NO.5

0 50 100 200 300
SCALE IN FEET

REACH 1

REACH 2

REACH 3

REACH 4

65' R/W

12'x6' RCB & TRANSITIONS

PLANTER AREA

15' ACCESS ROAD

5'

7' MIN. 11.5' MAX.

6'

8'

TYPICAL SECTION REACH 2

STILLING BASIN

84" CONC. PIPE

66" CONC. PIPE

TRANSITION

EXISTING GROUND

4.4' DROP STRUCTURE

12" WATER

6" GAS

INV. ELEV. 141.1'

STA 37+00

INV. ELEV. 141.1'

STA 41+00

INV. ELEV. 142.7'

STA 46+20

INV. ELEV. 151.9'

STA 46+50

INV. ELEV. 147.5'

STA 40+80

INV. ELEV. 147.3'

STA 36+80

INV. ELEV. 137.3'

S=.0015

S=.0015

S=.0015

FUTURE CHANNEL BOTTOM

INV. ELEV. 132.7'

INV. ELEV. 136.6

INV. ELEV. 136.7

18" VCP SAN. SEWER

1-1½ TELEPHONE CONDUIT

USBR IMPACT TYPE STILLING BASIN

84" RCP S=.018

66" RCP S=.035

STA 52+50 INV. ELEV. 152.8'

STA 53+00 INV. ELEV. 152.9'

STA 54+50 INV. ELEV. 156.1'

STA 58+28 INV. ELEV. 160.3'

170

160

150

140

180

30+00 35+00 40+00 45+00 50+00 55+00

REFER TO TRACING FOR LATEST REVISION

REV	DESCRIPTION	SUB	APPR

NOTES

DATE OF PHOTOGRAPHY: MAY 15, 1967 : MISSION: 6715

BASE MAP PREPARED BY : GEORGE S. NOLTE CONSULTING CIVIL ENGINEERS INC PALO ALTO, CALIFORNIA

DATE AUG 1969

DESIGN WFC

DRAWN MH

CHECKED JLR

santa clara county
FLOOD CONTROL and WATER DISTRICT

DESIGNED AND DRAWN BY:

ENGINEERING APPROVAL

PROJECT ENGINEER William M. Rowen

ACCEPTED BY DISTRICT

Lloyd C. Tronb
DISTRICT ENGINEER R.C.E. NO. 10822

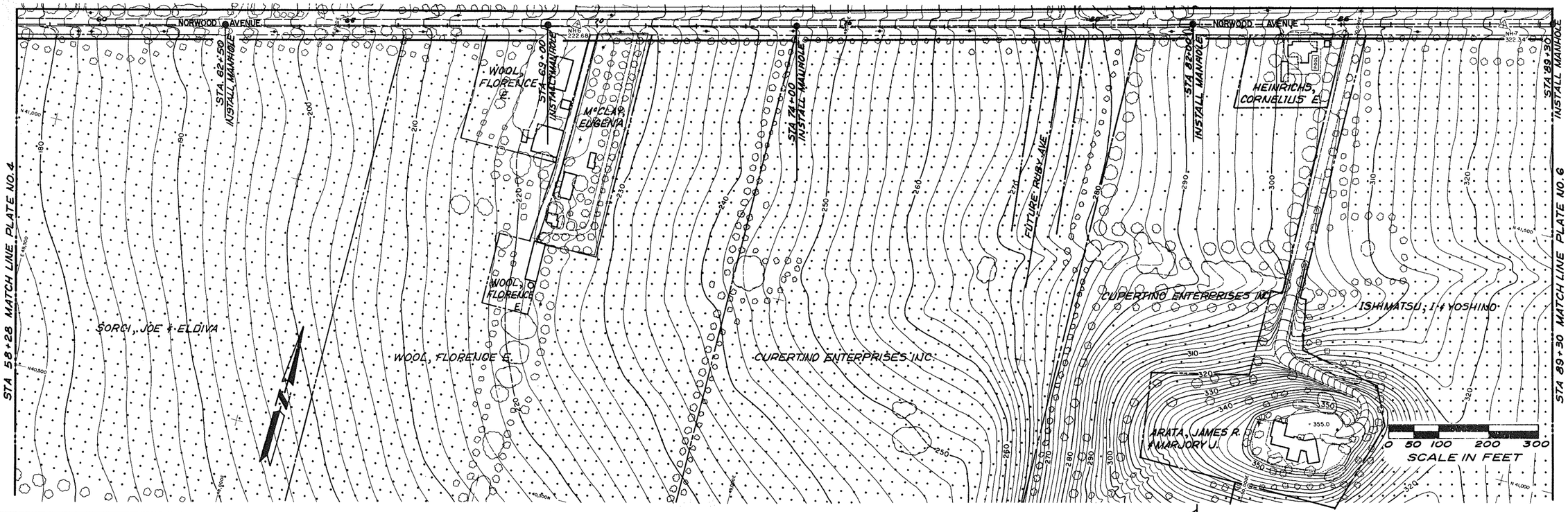
MAP AND GENERAL PLANS

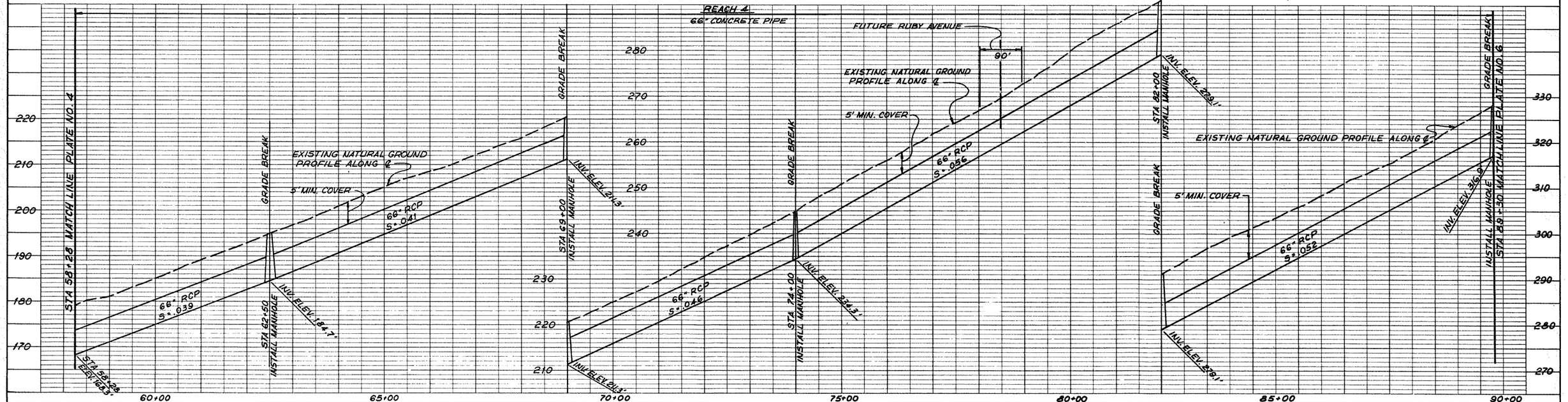
ZONE E-1 (EAST) PROJECT NO. 40042

NORWOOD CREEK

SCALE 1" = 100'

PLATE 4 OF 7





REFER TO TRACING FOR LATEST REVISION			
REV	DESCRIPTION	SUB	APPR

NOTES

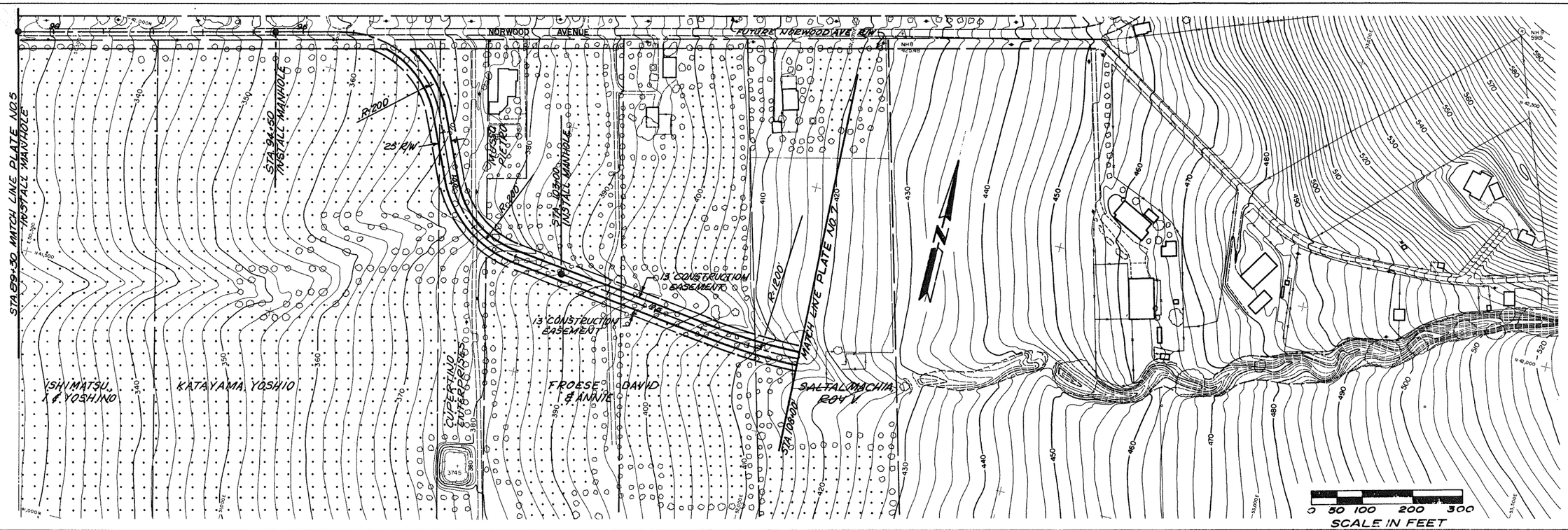
DATE OF PHOTOGRAPHY: MAY 15, 1967 MISSION: 6715 BASE MAP PREPARED BY GEORGE S. NOLTE CONSULTING CIVIL ENGINEERS INC. PALO ALTO, CALIFORNIA

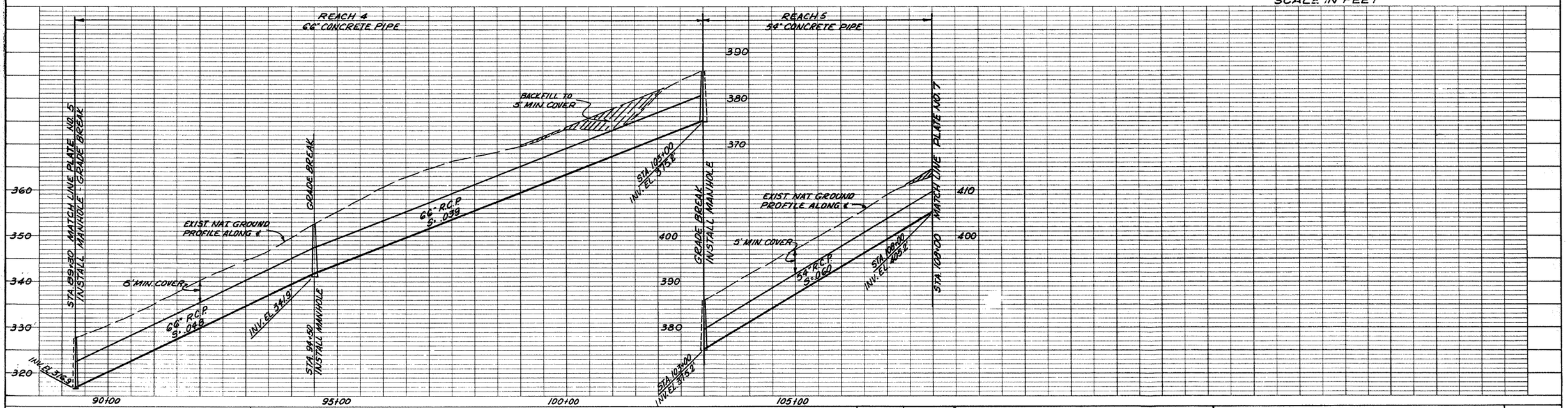
DATE	AUG. 1969
DESIGN	WFC
DRAWN	MH
CHECKED	JLR

santa clara county
FLOOD CONTROL and WATER DISTRICT
DESIGNED AND DRAWN BY:
ENGINEERING APPROVAL
PROJECT ENGINEER William W. Leaman
ACCEPTED BY DISTRICT
Lloyd C. Fowler
DISTRICT ENGINEER R.C.E. NO. 10922

MAP AND GENERAL PLANS
ZONE E-1 (EAST) PROJECT NO. 40042
NORWOOD CREEK

SCALE 1" = 100'
PLATE 5 OF 7





REFER TO TRACING FOR LATEST REVISION

REV	DESCRIPTION	SUB	APPR

NOTES

DATE OF PHOTOGRAPHY : MAY 15, 1967 MISSION: 6715

BASE MAP PREPARED BY : GEORGE S. NOLTE CONSULTING CIVIL ENGINEERS INC. PALO ALTO, CALIFORNIA

DATE	AUG 1969
DESIGN	SNW
DRAWN	SNW
CHECKED	JLR

santa clara county
FLOOD CONTROL and WATER DISTRICT
DESIGNED AND DRAWN BY:

ENGINEERING APPROVAL
PROJECT ENGINEER
William M. Aman

ACCEPTED BY DISTRICT
Lloyd C. Frank
DISTRICT ENGINEER R.C.E. NO. 10823

MAP AND GENERAL PLANS

ZONE E-1 (EAST) PROJECT NO. 40042

NORWOOD CREEK

SCALE 1" = 100'

PLATE 6 OF 7

FUTURE NORWOOD AVE

ARATA, ALMA R. & DAVID S.

SILVIERA, EDWARD & JOETTA

BOEHME, GEORGE & VERONICA

FISHER, HELEN V. ET AL

SILVIERA, MANUEL F.

SILVIERA, EDWARD & JOETTA

CHAVES, WILLIAM A. & LOUISE A.

STA 103+00 MATCH LINE PLATE NO. 6

125' R/W

13' CONSTRUCTION EASEMENT

RELOCATE PUMP & WELL

ELEV. 515

ELEV. 500

0+00 BEGIN SOUTH BRANCH

CONCRETE CHUTE

Standpipe

40.5 A.F. CAPACITY

INSTALL FARM BRIDGE

STA 111+75 INSTALL MANHOLE

STA 117+50 INSTALL MANHOLE

P.C. 1034

20' ACCESS ROAD

15' ACCESS ROAD

Irrigation line

FENCE TO ROAD

INSTALL CHAIN-LINK FENCE

L 61' R/W

9'x7'0 END PROJECT SOUTH BRANCH

75' MAX. R/W

Ruins

Corral

Residence

Pool

Reservoir

Barn

5775

0 50 100 200 300
SCALE IN FEET

304

E 1,612

E 1,613

N 306

700 690 680 670 660 650 640 630 620 610 600 590 580 570 560 550 540 530 520 510 500

REACH 5
54" CONCRETE PIPE

20' ACCESS ROAD

SOUTH BRANCH OUTLET

ELEV. 494.0'

FILL TO ELEV. 500

FILL EXISTING CREEK TO 5'-0.4 & CONFORM TO UPSTRUCTURE GRADE AT STA 122+00

15' ACCESS ROAD

R/W

EXISTING RIGHT / LEFT BANKS

CONCRETE CHUTE

EXISTING PROFILE ALONG ℄

EXCAVATION FOR DEBRIS BASIN

DROP INLET STRUCTURE

BACKFILL EXISTING CREEK TO 5' MIN. COVER OVER PIPE

GRADE BREAK

STA 103+00 MATCH LINE PLATE NO. 6

54" RCP S=0.0%

INV. ELEV. 406.2

STA 111+75 INSTALL MANHOLE INVERT ELEV. 437.3

54" RCP S=0.0%

STA 113+00 INV. ELEV. 437.2

117+50 INSTALL MANHOLE

112+63 SPILLWAY INV. ELEV. 447.5'

450 440 430 420 410 510 500 490 480 470 460

110+00 115+00 120+00

REACH 6
ROCK LINED TRAPEZOIDAL CHANNEL

MEET EXISTING CREEK GRADE

EXISTING ℄ PROFILE

20' ACCESS ROAD

5.0%

9'x7'0 END SOUTH BRANCH

61' R/W

EXISTING GROUND

FENCE

PLANTING STRIP

5' 15' ACCESS ROAD 5'

2%

CONCRETE CHUTE

1½:1

1:1

1½:1

1' ROCK LINING

4'

TYPICAL SECTION
REACH 6

530 520 510 500 490 480

0+00 BEGIN SOUTH BRANCH

0+00 5+00 10+00

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DATE	AUG. 1969
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santa clara county
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ACCEPTED BY DISTRICT
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DISTRICT ENGINEER
R.C.E. NO. 10822

MAP AND GENERAL PLANS

ZONE E-1 (EAST) PROJECT NO. 40042

NORWOOD CREEK

SCALE 1" = 100'

PLATE 7 OF 7